VS78M05 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
  I_{OM}: 0.5 A
- Output voltage
  V_O: 5V
- Continuous total dissipation
  P_D: 1.5 W (T_a= 25 ℃)

TO-220C

1.IN
2.GND
3.OUT

ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

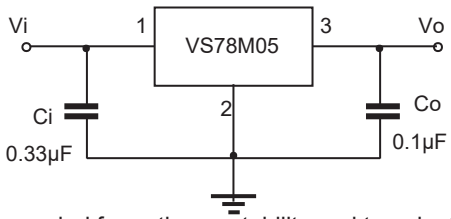
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE (Vi=10V,Io=350mA, Ci=0.33μF,Co=0.1μF,unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	Vo	T_J=25℃	4.85	5	5.15	V
		7V≤V_i≤20V, Io=5mA-350mA	4.75	5	5.25	V
Load Regulation	ΔVo	Io=5mA-0.5A,T_J=25℃		15	100	mV
		Io=5mA-200mA,T_J=25℃		5	50	mV
Line Regulation	ΔVo	7V≤V_i≤25V, Io=200mA,T_J=25℃		3	100	mV
		8V≤V_i≤25V, Io=200mA,T_J=25℃		1	50	mV
Quiescent Current	Iq	T_J=25℃		4.2	6	mA
Quiescent Current Change	ΔIq	8V≤V_i≤25V, Io=200mA			0.8	mA
	ΔIq	5mA≤I_O≤350mA			0.5	mA
Output Noise Voltage	V_N	10Hz≤ f ≤100KHz,T_J=25℃		40	200	μV/Vo
Ripple Rejection	RR	8V≤V_i≤18V,f=120Hz,Io=300mA	62	80		dB
Dropout Voltage	Vd	Io=350mA,T_J=25℃		2	2.5	V
Short Circuit Current	Isc	Vi=10V,T_J=25℃		300		mA
Peak Current	Ipk	T_J=25℃		0.5		A

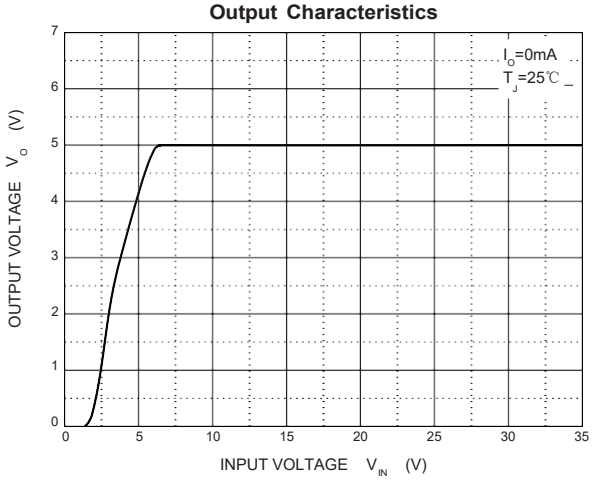
* Pulse test.

TYPICAL APPLICATION

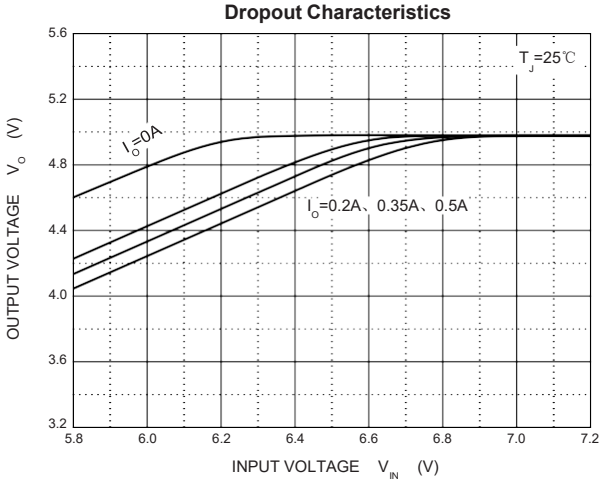


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

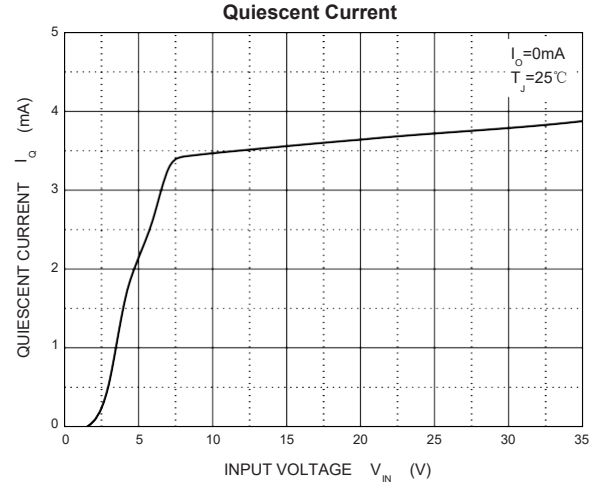
Output Characteristics



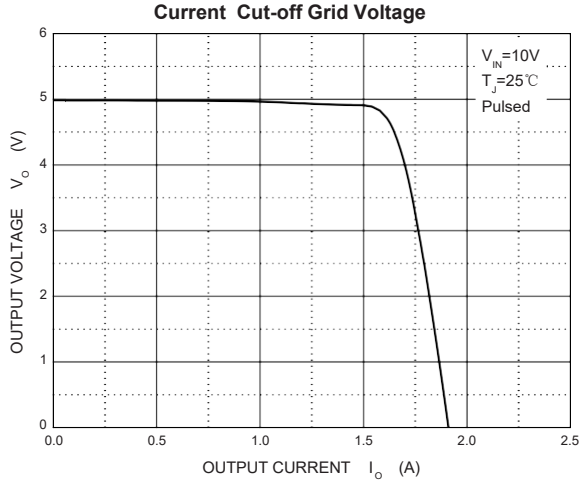
Dropout Characteristics



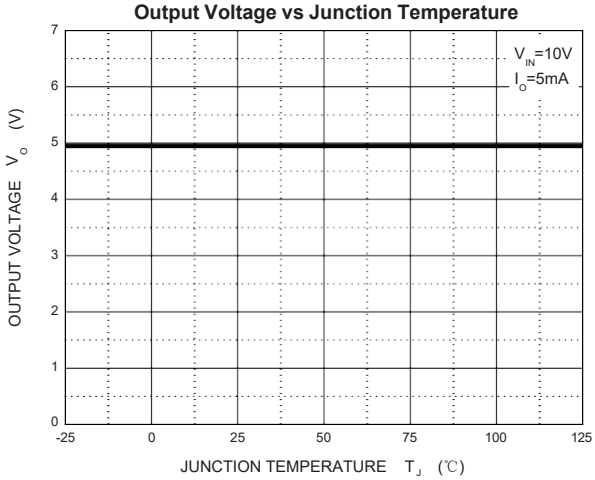
Quiescent Current



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve